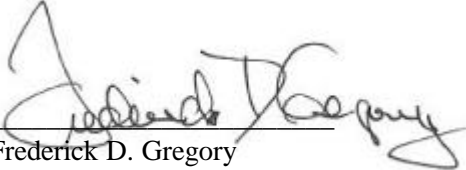


REVISION A



Development and Utilization of Annual Operating Agreements (AOA)


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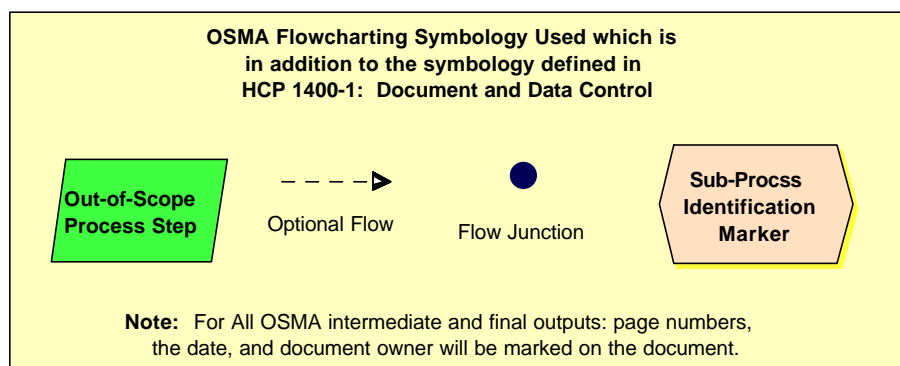
April 14, 2000
Date

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| Baseline | | January 13, 2000 | |
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1. Purpose

The purpose of this Office of Safety and Mission Assurance (OSMA) Headquarters Office Work Instruction (HOWI) is to document the process for managing the development of the Annual Operating Agreements (AOA) by NASA Centers, and ensuring approval of the AOA's by NASA Enterprises. This OSMA HOWI also specifies the Quality Records associated with the process.

2. Scope and Applicability

This HOWI is applicable to the Associate Administrator for Safety and Mission Assurance (AA/SMA), the Deputy AA/SMA; the Director, Enterprise Safety and Mission Assurance (Code QE); the Director, Safety and Risk Management Division (Code QS); the AOA Manager and Code QE Center and Enterprise Points of Contact (POC).

3. Definitions

- 3.1. AA: Associate Administrator
- 3.2. AA/SMA: Associate Administrator for Safety and Mission Assurance
- 3.3. Annual Operating Agreement (AOA): A NASA Center SMA management plan which defines customer requirements, SMA processes, resources required to meet SMA customer requirements, and the metrics defining effectiveness and efficiency of SMA processes.
- 3.4. Code QE: Enterprise Safety and Mission Assurance Division within OSMA
- 3.5. Code QS: Safety and Risk Management Division within OSMA
- 3.6. Enterprise Agreement: An agreement between OSMA and each Strategic Enterprise defining the roles, responsibilities and services that OSMA will provide each Strategic Enterprise.
- 3.7. HEDS: Human Exploration and Development of Space
- 3.8. POC: Point of Contact
- 3.9. PV: Process Verification (See HOWI 8700-Q006)

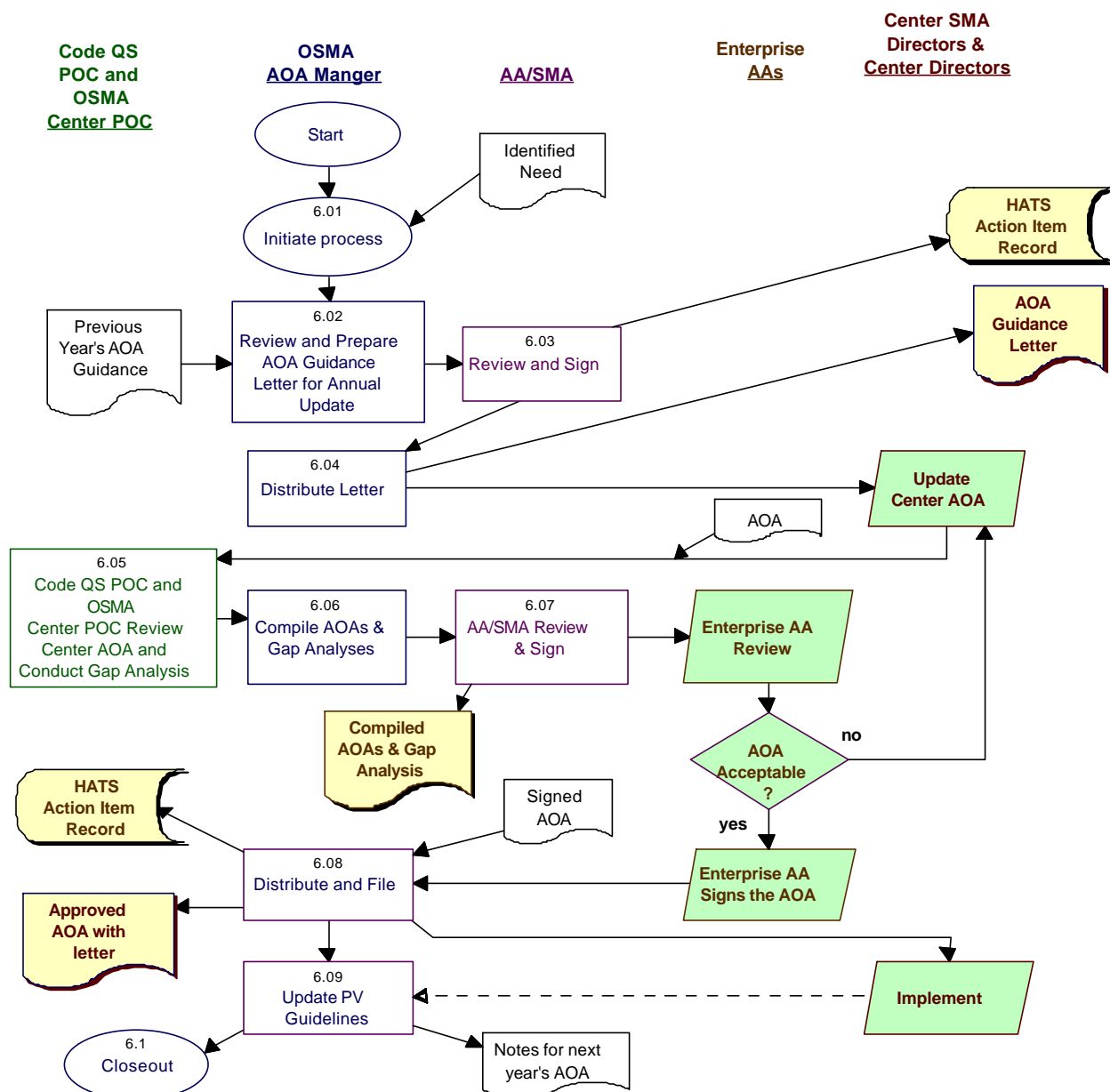
4. Reference Documents

The documents listed in this section are used as reference materials for performing the processes covered by the Quality Management System (QMS). Since all NASA Headquarters Level 1 (QMS Manual) and level 2 (Headquarters Common Processes) documents are applicable to the QMS, they need not be listed in this Section unless specifically referenced in this OSMA HOWI.

- 4.1. [NPD 8700.1: NASA Policy for Safety and Mission Success](#)

- 4.2. [Safety and Mission Assurance Enterprise Plan for the Office of Human Exploration and Development of Space \(HEDS\)](#)
- 4.3. [Safety and Mission Assurance Enterprise Plan for the Office Space Science](#)
- 4.4. [Safety and Mission Assurance Enterprise Plan for the Office of Earth Science](#)
- 4.5. [Safety and Mission Assurance Enterprise Plan for the Office of Aero-Space Technology](#)

5. Flowchart



6. Procedure

Note: The Interfaces between OSMA and each Strategic Enterprise are defined in the SMA Enterprise Plans listed in reference 4.1 and the Enterprise Plans listed in Section 4 above.

6.01 AOA Manager

Initiate Process:

Annually, the process will normally commence in March for all AOAs. The process can also be initiated anytime at the request of the AA/SMA if it is felt that a Center AOA update is needed. Appendix A provides the AOA Performance Specification for this process.

6.02 AOA Manager

Review and Prepare AOA Guidance Letter for Annual Update:

The previous year's AOA Guidance Letter is reviewed and updated to reflect current NASA SMA strategies reflected in updates to NASA Policies and Strategic Planning. The letter is prepared for AA/SMA signature. The target is for the annual AOA Guidance Letter to reach the Center Directors before April 1. Appendix C provides a sample AOA Guidance agreement.

6.03 AA/SMA

Review and Sign:

The AA/SMA reviews the draft letter. If the letter adequately reflects NASA SMA policy in the Section 4 references and strategic planning direction, the AA/SMA signs it. The letter is filed as a quality record as AA/SMA Correspondence per HOWI 1450-Q027.

6.04 AOA Manager

Distribute Letter:

The signed AOA Guidance Letter is distributed to the Center Directors with copies to the Enterprise AAs

The Center Directors, with the Center SMA Directors and other Center organizations with SMA functional responsibilities, will update the Center's AOA to conform to the AOA Guidance Letter and Center Policies and Strategic Planning. The updated Center AOA, signed by the Center Director and the center SMA Director, is forwarded to the AA/SMA for review and approval processing.

(Note: The AOA is intended to include all Code QE and Code QS functional areas.) The Center-signed AOAs for the next Fiscal Year need to reach the AA/SMA prior to October 1 of the upcoming fiscal year.

6.05 OSMA Center POC

Review Center AOA and Conduct Gap Analysis:

The OSMA Center POC performs a gap analysis of each Center AOA. The gap analysis is performed based on the previous year's AOA, the results of the previous Process Verification (PV) (see HOWI 8700-Q006), PV guidelines, current OSMA policy, guidance in the AOA Guidance Letter, and the new year's draft AOA. The review should be completed prior to November 1 of the planned year. Appendix B provides a sample Gap Analysis. (filed as a Quality Record).

6.06 AOA Manager Compile AOA's & Gap Analyses:

The AOA Manager compiles the individual AOA's & gap analyses and prepares a signature package to begin the AA/SMA review of the AOA's. The signature package contains the Center AOA's, the OSMA POC AOA reviews, the compiled Gap Analyses and any additional supporting materials needed. Gap Analyses are filed as a Quality Records.

6.07 AA/SMA AA/SMA Review & Sign:

The AOA's are reviewed by the AA/SMA and discussed with the Enterprise AA to determine acceptability. The AA/SMA concurs on the Center AOA by signing it and returning the AOA to the Enterprise AA or returns the AOA unsigned with comments to the Enterprise AA.

The Enterprise AA reviews the AOA and if it is not acceptable in his judgement, then it is returned to the Center for revising. If it is acceptable, the Enterprise AA approves and signs the AOA, the document is returned to OSMA for final processing.

6.08 AOA Manager Distribute and File:

The AOA Manager distributes the signed AOA's to the Centers, the OSMA Center POC and the OSMA web pages. The AOA Manager also reviews the AOA against the guidelines that were distributed in step 6.04 of this process. The Approved AOA is filed as a Quality Record.

6.09 OSMA Center POC Update PV Guidelines:

The new AOA's are reviewed and used as a basis for the next OSMA Process Verifications of the Center's SMA organization(s) (see HOWI 8700-Q006).

The PV files and processes are updated with the new AOA for each Center in conjunction with HOWI 8700-Q006. The revised guidance becomes an input for the following year's AOA development cycle.

6.10 AOA Manager Closeout:

When all work is done and the Quality Records have been filed, then the process is closed out.

7. Quality Records

| Record ID | Owner | Location | Media Electronic /hardcopy | Schedule Number & Item Number | Retention & Disposition |
|---|---------------------|-------------------|----------------------------|-------------------------------|--|
| HATS Action Item Record | HATS Admin | W/in HATS | Electronic | Schedule: 1 Item: 78.C | Keep as long as item has reference value then destroy |
| AOA Guidance Letter | OSMA Corres Control | OSMA Chron File | Hardcopy | Schedule: 1 Item: 22 | Retire to FRC after becoming 5 years old in 5 year blocks, then retire to NARA when 10 years old |
| Compiled AOAs & Gap Analyses | AOA Manager | AOA Manager Files | Hardcopy | Schedule: 1 Item: 7.A | Retire to FRC 2 years after AOA completion then transfer to NARA 10 years after AOA Completion |
| Approved AOA for each Center with any transmittal letters and associated gap analyses | AOA Manager | AOA Manager Files | Hardcopy | Schedule: 1 Item: 7.A | Retire to FRC 2 years after AOA completion then transfer to NARA 10 years after AOA Completion |

Appendix A: Performance Specification:

The OSMA AOA Process Should:

- Rack and stack AOA content against some sort of SMA model (which includes, as a minimum everything that the AA, OSMA, is responsible for; AOAs should address the things that NASA SMA organizations should be doing (presumably this should track to SMA or NASA Strategic Plan)).
- Ensure that AOA content supports important Agency-wide SMA initiatives; e.g., ASI, risk management.
- Be organized; i.e., every Center's AOA from any year is at our fingertips, presumably in a filing cabinet (quality records) or in official governmental storage.
- Include a gap analysis done by Code QE Center POCs, including input from interested QS staff members.
- Facilitate the identification of resource shortfalls by Center's SMA organizations.
- Include metrics—not just descriptions of what the metrics are, but actual display of metrics data in graphical format, including at least annually reporting on status of previous year's performance against the declared metrics.
- Support Center SMA organization business processes and not merely cause the development of AOAs because HQ wants them.
- Facilitate Center updates as warranted by significant changes during the year.
- Provide feedback to the Centers; i.e., copies of signed AOAs and any feedback from gap analyses, Enterprise presentations, discussion/resolution of short-falls, etc.

Appendix B: Sample Gap Analysis (GSFC from FY1999)

GSFC SMA Annual Operating Agreement Gap Analysis

(Measured against Headquarters expectations of Center SMA organizations)

Items included are those that are under the cognizance of the Office of Safety and Mission Assurance, NASA Headquarters.

| Expectation | Fully Addressed by AOA | Gap in extent of coverage in AOA | Comments |
|--|------------------------|----------------------------------|--|
| Mission Assurance | | | |
| Management & Planning | | | |
| Objective evidence of Strategic & Tactical Planning is provided, AOA is linked to Center Implementation Plan | X | | AOA metrics are same as GSFC implementation plan |
| Activity to Facilitate ISO 9000 implementation is described | X | | GSFC was ISO certified |
| Process performance metrics are established and tracked on a periodic basis | X | | FY99 process metrics reported in AOA. FY00 metrics established in AOA |
| Process performance metrics appear to be effective and accurately measure progress | X | | Metrics are expressed in comparison terms |
| Customer involvement in requirements definition and resource allocation is evident | X | | Mission assurance processes are negotiated with customer. This included Earth Science Enterprise AA. |
| Clearly identified and defined processes for all SMA functional areas are in place to meet Agency, Center, and SMA goals | X | | AOA discusses all SMA functional processes within GSFC Codes 300, 540, 803, and 205. |
| Customer feedback on performance in meeting customer needs is demonstrated | X | | Customer satisfaction ratings for supported projects are in AOA |
| Known Center SMA shortfalls are Identified and plans for resolution are included | X | | Shortfall identified in filling Wallops Flight and Ground Safety positions. No feeder program to replace specialized talent. Identified needed \$100K to fund training plan. |
| Training and career development needs of NASA SMA professionals, and planning to meet those needs are addressed | X | | CODE 300 personnel encouraged to improve skills at universities, special courses and in-house certification |
| Effective workforce planning and | X | | Addressed in FY00 AOA |

| Expectation | Fully Addressed by AOA | Gap in extent of coverage in AOA | Comments |
|--|------------------------|----------------------------------|--|
| utilization is evident | | | |
| Annual Operating Agreement is developed and submitted in a timely manner | X | | Signed AOA was delivered to NASA HQ on Oct 5. Prior to delivery, GSFC briefed the Earth Science Enterprise to ensure customer needs are being addressed and that all parties understand the AOA. |
| The AOA process appears to be effectively tailored and implemented by the Center SMA organization | X | | FY 2000 AOA reflects Center Implementation Plan |
| Major System & Program SMA Involvement | | | |
| SMA organization has early involvement with programs for development of SMA plans | X | | Each project proposal has an CODE 303 representative on team |
| Process for risk management assistance to programs/projects is evident | X | | Code 301 is designated Risk Management process owner. Also, through the OSSMA Systems Review Function projects are certified compliance with the Center's Systems Engineering process which includes risk management elements. |
| Software Assurance | | | |
| Are evident for the development of software assurance plans for all programs | X | | Code 304, Software Assurance Tech Office has a comprehensive software assurance capability: Software metrics, requirement analysis, code analysis. |
| Surveillance and verification reviews of programs and projects are conducted to ensure compliance with software policies | X | | Code 304 will work with projects to identify independent verification and validation levels and assist in project assessments. See above. |
| Reliability and Maintainability | | | |
| A process for Independent Assessment of reliability and maintainability is evident | X | | CODE 302 Reliability Office provides extensive flight project support in implementing a mission success reliability and systems safety GSFC project support program. |
| Safety and Health Programs | | | |
| Occupational Safety | | | |

| Expectation | Fully Addressed by AOA | Gap in extent of coverage in AOA | Comments |
|---|------------------------|----------------------------------|---|
| A defined program safety exists and details the necessary work to support conformance to 29CFR1960, 29CFR 1910, and NASA Safety and Occupational Health Policies to include those policies addressing lifting devices, pressure vessels, and underwater facility and non-open water operations: Also: | X | | Code 205, Safety, Environmental and Security Office, and Code 540 has provided AOA input that covers the safety and occupational areas of responsibilities. |
| An incident/mishap/close call reporting system and corrective action closure tracking system addressing the actual or potential loss of life and personal injury. | X | | Mishap reporting system well managed through Code 302 with Center support from Code 205. |
| Safety & Health management performance indicators are used for preventive action. | X | | Performance indicators are established and used. |
| A process for review and evaluation of plans, facilities, systems, programs, equipment, processes, and activities for hazards is defined. | X | | Code 220 Facility Systems Safety conducts a comprehensive set of plan reviews, site inspections, safety walk-thru's, and safety consultations. |
| A process is defined to investigate all alleged hazardous conditions, including a system for non-reprisal reporting of unsafe or unhealthful conditions. The anonymous NASA Safety Reporting System is in place as an additional reporting mechanism. | X | | NSRS system is in place at GSFC |
| Safety and health risks are identified and control processes exist | X | | Detailed risk management control processes are included in the GSFC AOA. |
| Facility Safety, Reliability and Maintainability | | | |
| A documented and functioning program for assessing facility for technical risk. | X | | Appendix C1-5 includes Facility Systems Safety methodology. |
| A controlled process for facility configuration. | X | | Change control process established. |

| Expectation | Fully Addressed by AOA | Gap in extent of coverage in AOA | Comments |
|---|------------------------|----------------------------------|---|
| System Safety Processes | | | |
| Hardware | X | | Activity developed using the Mission Assurance Guidelines document for guidance and tailoring. |
| Software | X | | Ref. ISO documents. |
| Facility | X | | Ref. ISO documents. |
| Fire Protection | | | |
| A documented program for fire protection. | X | | Appendix E1-7 describes Fire Protection activity. |
| Emergency Preparedness | | | |
| Emergency preparedness processes are documented | X | | Appendix E1-4 describes Center Emergency Management program. |
| Adequate resources are provided to ensure emergency preparedness | X | | Appendix E1-4 describes Center Emergency Management program. |
| Range Safety | | | |
| As required by organization mission, a process for assuring safety for range operations is defined and is appropriately staffed | X | | Defined well by Code 302 and Code 800 (Range Safety Officer) for Wallops operations. |
| Aviation Safety | | | |
| A process for oversight of aviation operations hazards is defined | X | | Code 800 has provided input to for operational flight safety. This includes Flight Safety Group and Aviation Safety Office (Code 830) |

Appendix C: AOA Guidance

SAFETY AND MISSION ASSURANCE ANNUAL OPERATING AGREEMENT GUIDANCE

OVERVIEW

“The NASA Strategic Plan is based on a commitment to satisfy our external customers. Our performance in carrying out programs, and our success as an agency, will be judged by our customers, based on our ability to meet their requirements.” (NASA Strategic Plan, 1998)

Annual Operating Agreements (AOA's) are Center Safety and Mission Assurance (SMA) management plans, focused on customers for SMA products and services. AOA's establish the planning and execution processes to assure available SMA resources are allocated to optimize risk reduction. They are directly linked to the NASA Strategic Management Process, as described in the NASA Strategic Plan, NASA Policy Document (NPD) 1000.1, the NASA Management Handbook, (NPD 1000.2), NASA Policy for Safety and Mission Success, (NPD 8700.1), and the SMA Strategic Plan. The AOA should be consistent with, and integrated into, the Center's Implementation Plan.

When the NASA Administrator directed that NASA Headquarters shift to a “corporate” headquarters role, necessary changes were made within the Office of Safety and Mission Assurance (OSMA) to provide less oversight of Center SMA activities and to develop insight mechanisms. Two of these mechanisms are the Annual Operating Agreement and Process Verification (PV). AOA's and PV's help assure OSMA that sufficient Enterprise resources are allocated for the SMA functions and that the SMA processes are managed in a manner that meets Enterprise requirements.

Specific to each Center, the AOA process does three things: (1) assures *planning* for SMA functions to meet the institutional, program, and project requirements; (2) establishes a basis for *negotiation* at the Center level on resource allocations necessary to meet institutional, program, and project requirements; and (3) uses metrics for *management* of the Center's SMA organization. The AOA process encourages continuous improvement and closed-loop feedback of SMA process performance. The AOA process should start and end with the Enterprise, institution, program, or project as the customer. The three basic questions that must be answered in an AOA are: "What are the customer's requirements?" "How effectively were my customer's requirements met?" and "How efficiently were the Center's SMA resources used to meet these requirements?"

The PV process is designed to review the management of SMA processes at all NASA Field Centers, the Jet Propulsion Laboratory, and off-site Component Facilities. The PV is focused on a Center's SMA management processes as they are described in the AOA. The AOA and PV also facilitate SMA conformance with NASA management requirements and initiatives, such as full-cost accounting, ISO 9000 certification, self-assessments, Congressional mandates and public laws (including the Government Performance and Results Act).

This AOA Guidance provides the minimum requirements and guidelines for the development of AOA's at each Field Center and respective Component Facilities. Each Center is expected to establish a process for AOA development and to define contents of their AOA in a way which best meets *their* needs. The AOA is intended to be adaptive to meet changing needs at Centers. It should serve the Center's needs while also serving as an appropriate insight mechanism for OSMA. Functional areas which are not under the cognizance of OSMA, but are the responsibility of the Center SMA Director, such as environment and security functions, may be included at the option of the Center's SMA Director. They are not required to be included. SMA functional areas under the cognizance of the Associate Administrator (AA), OSMA, as described in NPD 8700.1, but not under the management cognizance of the Center SMA Director, shall be identified and included.

A. Responsibility

NPD 8700.1, NASA Policy for Safety and Mission Assurance, establishes the SMA policy for AOA's and defines the following responsibilities:

1. Associate Administrator for Safety and Mission Assurance— Concur on the Centers' or Headquarters' SMA AOA,
2. Enterprise AA's — Approve Enterprise SMA Agreements (AOA's will be forwarded by OSMA for Enterprise AA approval in accordance with the individual Enterprise Safety and Mission Assurance Agreements.),
3. Center Directors — Develop and approve the Center's SMA AOA,
4. Center SMA Functional Manager — Formulate the Center SMA AOA, provide the Safety, Reliability, and Quality Assurance (SR&QA) products and services described in the AOA, and manage the delivery of SR&QA products and services in accordance with the AOA.

A Center's SMA organization will also obtain input and concurrence on the AOA from other Center organizations that have management cognizance of SMA functional areas at the Center as described in NPD 8700.1, but not under the management cognizance of the SMA Director. This includes a Center's Component Facilities.

B. Contents of the AOA

An AOA should include both Agency SMA requirements and Center-unique SMA customer requirements. The AOA should also include definitions of these requirements, descriptions of SMA processes and activities to meet these requirements, resource allocations to meet these requirements, and realistic metrics for determining the effectiveness and efficiency of the SMA processes and activities.

An AOA should reflect the vision, goals, and implementation strategies of the SMA Strategic Plan. The AOA should include activity or process descriptions for *all* of the SMA functional areas that are managed by the Center SMA organization. Process descriptions for those areas of OSMA functional cognizance which are not managed by the Center SMA organization (i.e., institutional, fire protection, aviation safety, etc.) should also be included.

Appendices I through VI provide additional guidance for AOA content. These appendices include:

- Appendix I - Guidelines to aid development of an AOA;
- Appendix II - Format to describe Processes/Activities;

Appendix III - Format to describe Resource Allocations for Processes;

Appendix IV - List of Centers and Component Facilities to be included in AOA;

Appendix V - List of Safety and Risk Management Processes;

Appendix VI - Risk Management Process Flow Chart.

Required components of the AOA include:

1. **Signature Page** — Include signatures and signature blocks for Center Director, Enterprise AA, AA/OSMA (concurrence), Center SMA Director, Center SMA senior managers, and customers (as appropriate). Identify signatories by title and name.
2. **Introduction** — Briefly describe the AOA and its content.
3. **Purpose** — Describe the intent of the AOA, why it is being developed, and how it will be used.
4. **Center SMA Mission** — Provide a brief description of your Center's SMA role and mission. Functional organizational charts are useful here. Identify any SMA functional responsibilities included in NPD 8700.1 but which are not under the management responsibility of the Center SMA Director.
5. **Linkages** — Describe the linkages between the AOA and strategic planning documents used by other organizations in NASA with which the Center SMA organization must interface to perform its mission.
6. **Assumptions** — Provide the planning and resource assumptions used to develop the AOA. These assumptions can include, but are not limited to; projected funding increases or decreases, funding reserves, FTE increase or decrease, new program/project starts, program/project completion, anticipated changes to on-going programs, response to Headquarters directed initiatives, etc.
7. **Long-term Goals** — Describe the long-term goals (at least 5 years out) that will provide general direction and guidance to the individual activities and work processes employed by the SMA organization in support of the Center and the Agency. These goals should be tied to the SMA Strategic Plan.
8. **Macro-metrics** — Include macro-metrics to measure the SMA organization's performance in meeting top level SMA goals. Macro-metrics are selected metrics that most clearly indicate how well the organization is meeting its goals. They are designed to measure significant organizational goals and to show trends useful to senior management for process improvement.
9. **Issues/Resource Shortfalls** — The internal process of AOA development and update will help determine resource shortfalls (human, financial, capital equipment, etc.). Where these shortfalls/issues have not been resolved, they should be identified and included in the AOA with a plan for resolving the shortfall or managing the resultant risk within the Center/Project.
10. **Activity Descriptions / Work Processes** (use format provided in Appendix II).
11. **Resource Allocations for each Process** (use format provided in Appendix III).

C. **Processes/Activities for Special Attention**

AOA's should identify processes and activities that support OSMA, areas of special attention. These include:

1. **Risk Management** — The AOA should include risk management consulting in the AOA as a service provided by SMA organizations to Program/Project Managers (P/PMs). This service includes assistance to P/PMs in satisfying the risk management requirements of the new NPG 7120.5A, “Program and Project Management Processes and Requirements.” SMA organizations should be prepared to provide assistance to P/PMs in the preparation of Program/Project Risk Management Plans, as well as provide assistance, as needed, in each of the steps of the risk management process. These include risk identification, analysis, planning, tracking, controlling, and communication and documentation. Appendix VI provides a flowchart description of the process. This flowchart is from the final draft of NPG 7120.5A.
2. **Mishap Reduction** — The AOA should identify the processes that are in place or will be initiated to reduce or eliminate mishap experiences. As a minimum, these will include the elements of 29 CFR 1960 that are asterisked in the latest Occupational Health and Safety Administration (OSHA) Checklist for Occupational Safety distributed to center safety organizations. The source document for this is the OSHA Baseline Questionnaire. Line managers responsible for the prevention of employee injuries and property damage due to mishaps should be identified. For mishap reduction processes, the AOA should demonstrate that a monitoring system, such as the Incident Reporting Information System (IRIS), and an appropriate campaign is used to report, track, measure, and reduce close call incidents encountered at the Center. Mishap investigation processes should demonstrate identification of root cause and contributing factors to prevent reoccurrence of the mishap .
3. **Training** — The AOA should identify the processes for developing, institutionalizing, utilizing, and continually improving a comprehensive and properly documented training and career development program for NASA SMA professionals. These processes should include tracking metrics for student participation and course selection and utilization.
4. **Software Assurance** — The AOA should include Software Assurance activities. In particular, the AOA should identify the processes for implementation of a Software Assurance program that reduces the technical and programmatic risk associated with the delivery of software meeting NASA's technical, schedule, and budgetary needs.
5. **ISO 9000** — Where appropriate, the AOA should identify the SMA processes that are ISO 9000 certified or planned to be certified in accordance with draft document NPD 8730.5.

D. **Schedule**

- May 1: Centers forward *draft* AOA for the next Fiscal Year to the designated OSMA point of contact. (This date is intended to ensure that AOA's are developed in parallel with the Fiscal Year budget development.)
- September 1: Centers forward approved and signed AOA's for the next Fiscal Year to NASA Headquarters OSMA for OSMA concurrence and forwarding to Enterprise AA's.

E. Approvals

AOA's are considered to be a negotiated agreement among Center SMA customers, other Center organizations responsible for performing the safety compliance functions, the SMA organization, and the Center Director. They are approved and signed by the Center SMA Director, the Center Director, and the Enterprise Associate Administrator, and are concurred on by the Associate Administrator for Safety and Mission Assurance. Customer, or other Center organizations', signatures are also encouraged if appropriate. This includes a Center's Component Facilities.

Approval of the AOA by the Center Director

Approval of AOA's by the Center Director assures that the requested level of SMA support to the Center and Enterprise programs and projects is provided in terms of resources, (funding and FTE's), and ensures that the appropriate SRM&QA activities are provided to the Center and the Enterprise for the management of risk.

AOA Concurrence by the Associate Administrator for Safety and Mission Assurance

Concurrence on AOA's by the Associate Administrator for Safety and Mission Assurance demonstrates that Code Q has reviewed the AOA, agrees that appropriate processes and levels of SMA support to the Enterprise are provided, and concurs that accepted risks are appropriate to maximize mission success.

AOA Approval by the Enterprise Associate Administrator

Approval of an AOA by the Enterprise Associate Administrator demonstrates Enterprise review, evaluation, and modification if necessary, of the AOA, commits appropriate levels of SMA support to the Enterprise in terms of resources (funding and FTE's), and agrees that the accepted risks are appropriate to maximize mission success.

F. Transmittal of AOA's

A signed, original AOA plus five copies should be provided to OSMA, addressed to the Director, Enterprise Safety and Mission Assurance (Code QE). Both the Enterprise Safety and Mission Assurance Division and the Safety and Risk Management Division (QS) have the responsibility for review of AOA's. QE is responsible for forwarding the AOA's for AA/OSMA concurrence and for AA Enterprise approvals. A final approved and signed copy of the AOA will be returned to the Center SMA organization.

APPENDIX I: AOA Guidelines

Basic tenets of an AOA include:

- A. AOA's are SMA resource and action agreements among Center Directors, Enterprises, and Center SMA organizations.
- B. AOA's shall be aligned with NASA Policy and Enterprise goals.
- C. Each Center and its SMA organization is unique, and its AOA shall reflect this uniqueness in addition to addressing Agency wide requirements (OSMA programs, mishap reporting, etc.).
- D. Each AOA should have a vision for long-term growth and continuous improvement of SMA practices and disciplines.

Headquarters corporate insight processes (AOA and PV) cannot "correct" Center SMA problems: each AOA shall develop self-assessing, self-examining, self-tracking, and self-correcting processes meeting customer requirements to ensure NASA Enterprise Safety and Mission Assurance success.

Guidelines to Aid Development of an AOA:

The following are questions and suggestions that should be considered when developing the AOA content. The current SMA Strategic Plan and other Headquarters and Center policy and planning documents should also be reviewed.

1. Planning

- How do SMA organization goals and objectives relate to NASA's, OSMA'S, and the Center's strategic planning process?
- Are customers and Enterprises clearly identified by name?
- Are the process descriptions clearly stated?
- Do the budgets and human resource allocations make sense for a given process?
- Are metrics included? Are they achievable, useable metrics that contribute to continuous improvement?

2. Management

- Can the SMA organization manage in accordance with the AOA?
- Does the introduction provide sufficient information to make the AOA a stand-alone management document?
- Is the AOA consistent with, and integrated into, the Center's Implementation Plan?
- Is a functional organizational chart included? Are long-term goals included?
- Are the underlying assumptions stated?
- Are macro-metrics identified? (These are the top-level metrics used by the SMA Director to determine the health of the organization's processes.) Are the macro-metrics tracked by the Center SMA organization's management as a tool for process improvement?

-- Are shortfalls and issues identified along with a plan for internally meeting the shortfalls and addressing the issues?

-- Does the AOA reflect "new ways of doing business" (e.g., customer focus, value added, insight or oversight where appropriate, etc.)?

3. Institutional Functions

-- Is the Center's Operational Safety Program meeting the basic OSHA requirements to implement OSHA Standard 29 CFR 1960 with its current manpower and resources?

-- Are "asterisked" items in the OSHA Standard 29 CFR 1960 Checklist (OSHA citables and "Notice of Violations") complied with in identified processes? (These have been provided separately to Center safety personnel.)

-- Based on your knowledge of the performance of the OSHA program at your Center, do you consider the processes and associated resources listed in the AOA to be adequate?

-- Do the process descriptions and metrics address the Operational Safety Program (includes Emergency Preparedness, NASA Safety Reporting System, Fire Protection, Configuration Management, Facility Safety, Workplace and Laboratory Safety, Confined Space Entry, Pressure Systems, Lifting Devices, Explosive Safety, Safety Training and Awareness Programs, etc.)?

-- What are the overall metrics for the Operational Safety program?

-- Are Operational Safety linkages to the various NASA Programs and Projects at the Center identified? Are the AOA's coordinated with and concurred on by other Center organizations that actually perform the safety compliance functions?

-- What evaluation process is in place to assess how well the Operational Safety Program is performing at the Center? What is the list of outstanding Operational Safety related activities that may not be accomplished due to the limited resources?

-- Are Aviation Safety management processes identified?

-- Is the mishap reporting process defined? Are the reporting metrics appropriate?

APPENDIX II
PROCESSES/ACTIVITIES FORMAT

| | |
|--|-----------------|
| SAFETY AND MISSION ASSURANCE ANNUAL OPERATING AGREEMENT | |
| CENTER: | OFFICE: |
| ACTIVITY DESCRIPTION: | |
| RISK OF DOING NOTHING: | |
| METRIC(S): | GOAL(S): |
| TASKS: | |
| CUSTOMER(S): | |

APPENDIX III
RESOURCE ALLOCATIONS FORMAT

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------|---------------------|----------|--------------|------------------------|--------------------------------|-------------------|---------------------------|--------------------|---------------------------|------------------------------------|----------------------|--------------|
| PRIORITY | LINE ITEM NUMBER | ACTIVITY | WORK PROCESS | ENTERPRISE CUSTOMER | MINIMUM EFFECTIVE CS FTE | CUM. CS FTE | COST FOR CS SUPPORT | COST FOR NPS | OTHER CONTRACT COST | TOTAL CONTRACT COST (8+9) | TOTAL COST (7+10) | CUM. COST |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
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| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
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| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
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| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |

APPENDIX IV

NASA Centers and Component Facilities To Be Included in AOA

Ames Research Center

Dryden Flight Research Center

Goddard Space Flight Center

- Wallops Flight Facility

Jet Propulsion Laboratory/Pasadena, CA

- JPL Deep Space Network
 - Goldstone/Barstow, CA
 - Madrid, Spain
 - Canberra, Australia

Johnson Space Center

- White Sands Test Facility
- NASA Industrial Plant
 - Downey, CA
 - Palmdale, CA

Kennedy Space Center (KSC)

- KSC/Vandenberg Launch Facility, CA

Langley Research Center

Lewis Research Center

- Plum Brook Station, OH

Marshall Space Flight Center

- Michoud Assembly Facility, LA
- Santa Susana Field Laboratory, CA

Stennis Space Center

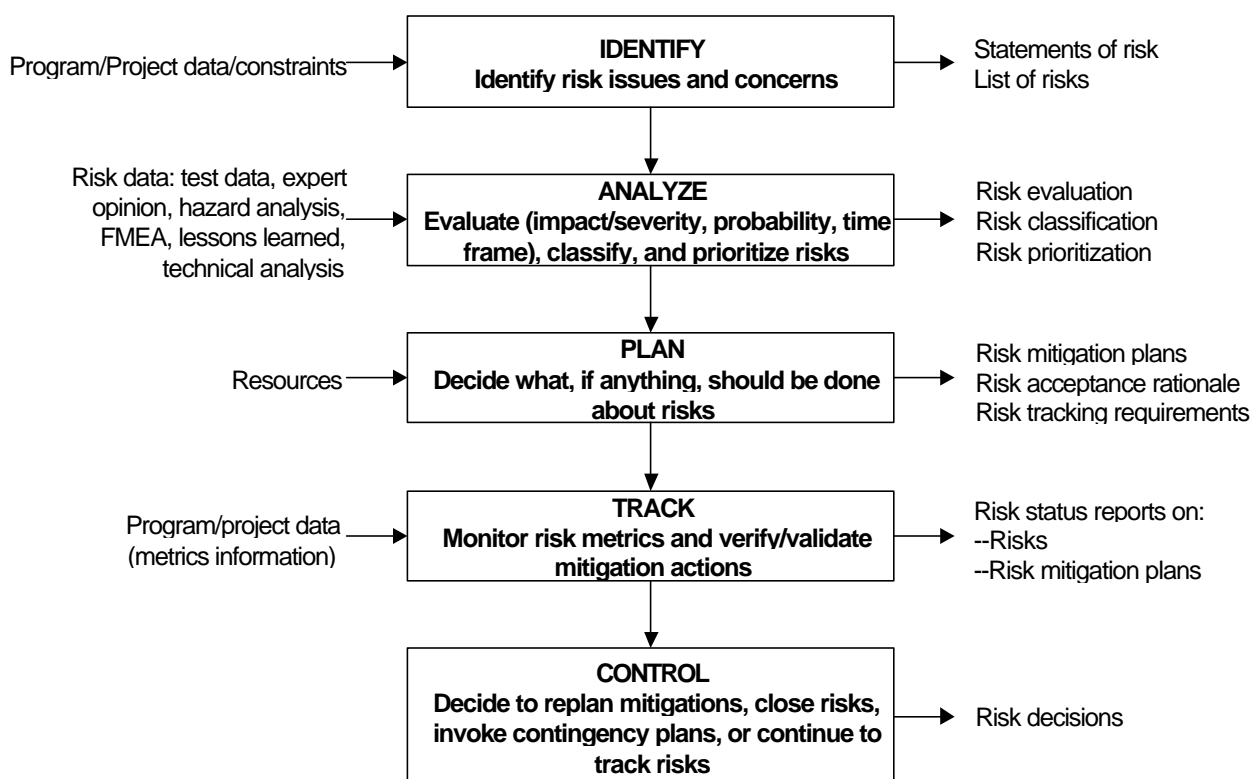
APPENDIX V

List of Safety and Risk Management Processes to be Included in AOA's

- | | |
|---|-----------------------------------|
| - Emergency Preparedness | - NASA Safety Reporting System |
| - Fire Prevention/Protection | - Orbital Debris Minimization |
| - Mishap Reporting and Investigating | - Facility and Operational Safety |
| - Facilities Configuration Management | - Reliability and Maintainability |
| - Facility and Operational Safety: | - Lessons Learned Information |
| - Aviation Safety | - Explosive Safety |
| - Mechanical Parts | |
| - Exposure to Hazardous Chemicals/Materials | |
| - Range Safety (delegation to KSC) | - Hazard Communications |
| - Lifting Devices | - Government/Industry Data |
| - Pressure Vessel System Safety Exchange Program | |
| - Underwater Facility and Non-Open Water Operations | |
| - Problem Reporting and Corrective Action | - Workplace and Laboratory Safety |
| - NASA/OSHA Interface | - Interagency Nuclear Safety |
| - System Safety | Review Panel (INSRP) |
| - Hardware | - Software |
| - Risk Management/Assessment | - Facility |
| - NASA Alert Reporting | - SMA Training |

APPENDIX VI

RISK MANAGEMENT PROCESS FLOW CHART



Note: Communication and Documentation extend throughout all of the functions.